~~Deepn~~ to DEEPEN pit of PUMP Hou

This is a complete specifications and PLAN sketches COPIED from City of Seneca governing body minutes of July 19th 1899.

Seneca. Kansas. July 19th 1899

Specification for deepening the pump pit at the Seneca water works.

The work is shown on the accompanying sketch, & consists of lowering the pumps by means of deepening the pump pit.

This will also require a new tunnel from the pump pit. to the well.

This, and the lowering of the engines will be considered separately.

Material. the masonry will be of stone and concrete. the stone must be of good quality, with flat beds and the surface clean from rotten stone or clay. the stone to be thoroughly cleaned before being lowered into the pit.

All material either lowered or raised to be so handled as to guard the engines from injury by falling stuff and from dust. no dropping of stuff or shovelling down spouts is admissible with any dry material.

Cement mortar is to be used for all the stone work and concrete, this is made with three barrels of Louisville cement to one yard of sand, a box holding 9 cubic feet of sand being used to each barrel of cement, or otherwise exactly measured. So mixed, it is filled with broken stone for concrete by shovelling till it is thoroughly incorporated, Concrete is to be mixed rather soft, and placed as fast as made, being well packed to place with light rammers.

The mortar for stone work is better for an hour or more after being mixed, being broken down and retempered before using, it will be understood that it is necessary the work should be well done in every particular, stone fully and thoroughly bedded, and all vacancies entirely filled. the stone work built against the earth everywhere, use the mortar so soft that the stone will sink in it, no dry mortar should be used.

Now, referring to the sketch, the pockets
marked 1, are dug first, and as far into
the pump pit as can be without interfering
with the engines – this is to give working room.
concrete bottom 18 inches deep is placed in the
rench and the wall started on this.
he inside of the wall will be governed by the
rojection of the concrete under the present wall.
this is more than 1 foot it should be trimmed
own to that, if it averages less, build the wall
that the rough edge of the concrete can be finished
ir with it.
he corners are now built up, the piers being
ughly plumb on the ends, but joggled so
at when built against, there will be an uneven
int.
ticular pains must be taken to get full bearing
der the concrete. For this purpose the bottom
the concrete should be cleaned and levelled up
cement mortar so ~~that~~ it will be fair

and well set before the pier reaches it.
In case any part of the old work is deemed unsafe against falling when it is undermined by these pits, screw jacks made of gas pipe may be used, and if necessary, built into the wall. The corners being made secure, a middle pit is dug on each side and built up in the same manner, then the piers are joined by filling in the spaces marked 3. and the whole wall made complete and secure, before any work is done towards lowering the engines.

Tunnel

The tunnel is excavated with a flat bottom 8½ feet wide - and to a height of 5½ feet, taking care not to cut the sides away so as to leave vacancies behind the brick work.
A centre line being now stretched in it it is arefully trimmed to the shape and size shown the sketch.

An opening being cut in the wall of the well 4 pieces of old rail road rail are placed side by side, as sketched, one end resting on the wall – the other end on sound ground, inside of the ground which has been disturbed by the sinking of the well,

these are now filled in between and over, with Concrete made of stone broken small, and the Concrete carried up the side behind moulds made of boards so placed as to make the invert of the proper shape.

the Arch is made of hard burned brick in two courses.

Here is shown the need of the earth being cut true, if any vacancies are formed, they must be filled, – a centre 25 inches long is used, and drawn forward as often as three lengths of brick are built in –

Sinking the Pumps.

By taking proper care. the pumps can be lowered. with their foundations. without breaking the masonry or needing to build new.

Having cut away around them to a convenient depth - underrun four 8×8 oak timbers at about equal distances - these timbers projecting by the wall 12 or 16 inches -

on top of these place a 12×12 or 10×12 timber on each side of the foundation wall -

Bolt these together with inch screw bolts

now sink places for lifting screws. (these to be all of the same thread).

see ~~that~~ the bases on which the screws set are stable,

now take the weight of the engine and foundation off the earth -

Remove the earth - as sketched. shift and continue

the 8×8 pieces may be built into the foundation after it is placed.

Labor and Material

Excavating pump pit. 250 yds. at 1^{00}	250,00
30 Cords stone, 7^{00}	210,00
30 yards sand. 2^{00}	60,00
90 barrels cement. 1,75	157,00
Labor on walls. 6^{00} per cord.	180,00
Hoisting apparatus tools, stages &c.	100,00
	957,00
Add 20% for incidental expenses	192,00
	$ 1149,00
Helping engineer to lower pumps. changes in piping &c – (Pierces work) —	300,00

Tunnel

Excavation. 30 C yds. 2^{00}	60,00
6 yds concrete 7^{00}	42,00
3500 brick, laid, 25^{00}	87,00
	189,
Add 20% —	38,
	$227

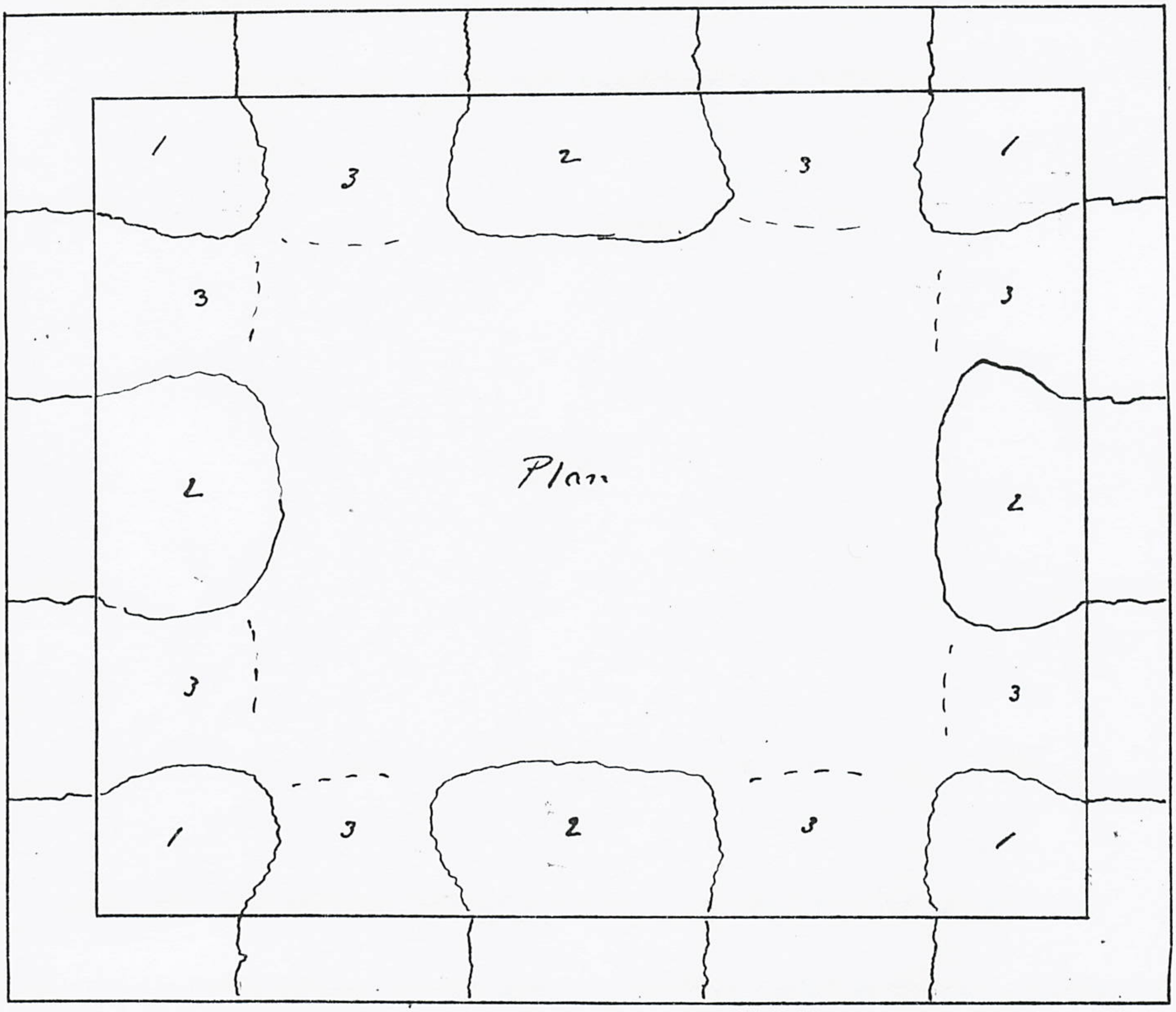
Making a total of 1676 $. There are some incidentals not easily estimated. the cost may reach 2000 $

Respectfully submitted. G. W. Parsons

J. W. PEARSONS, C. & M. E.
MEM. AM. SOC. C. E. (1875.)

Pump pit. Seneca W Works.
scale 1/4" p'

1611 BALTIMORE AVENUE,
Kansas City, Mo., July 1899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Plan
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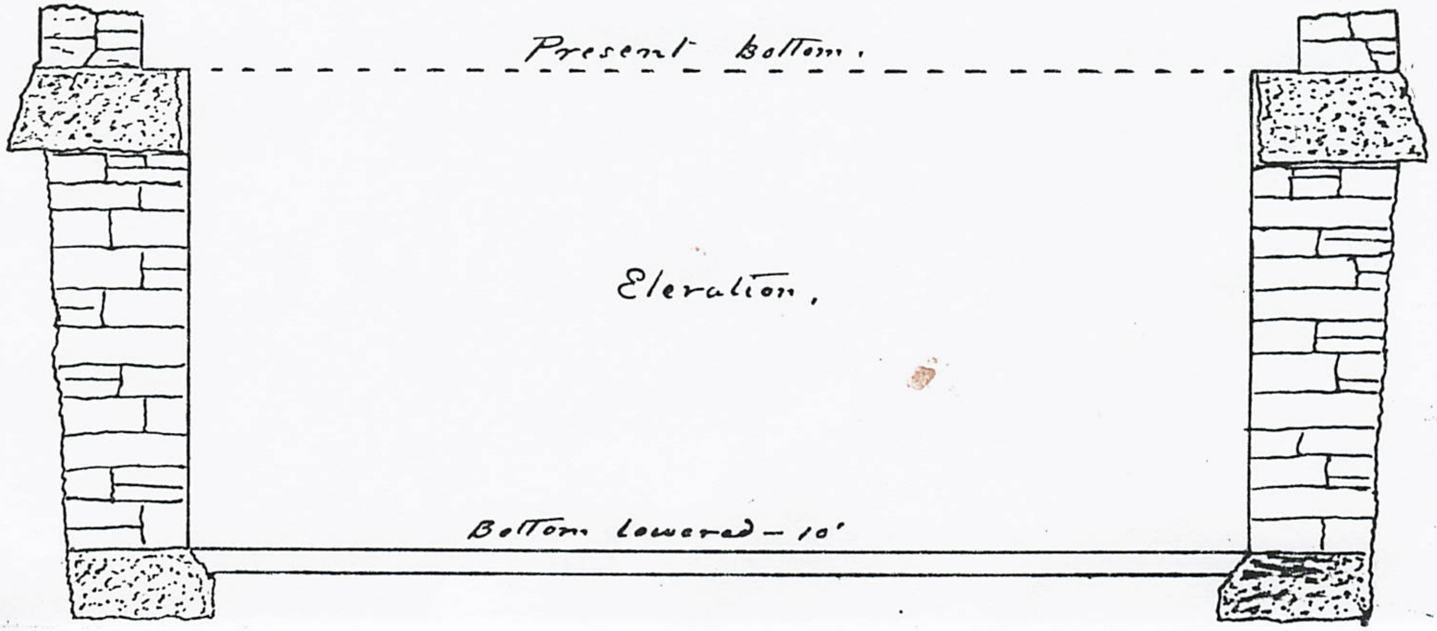
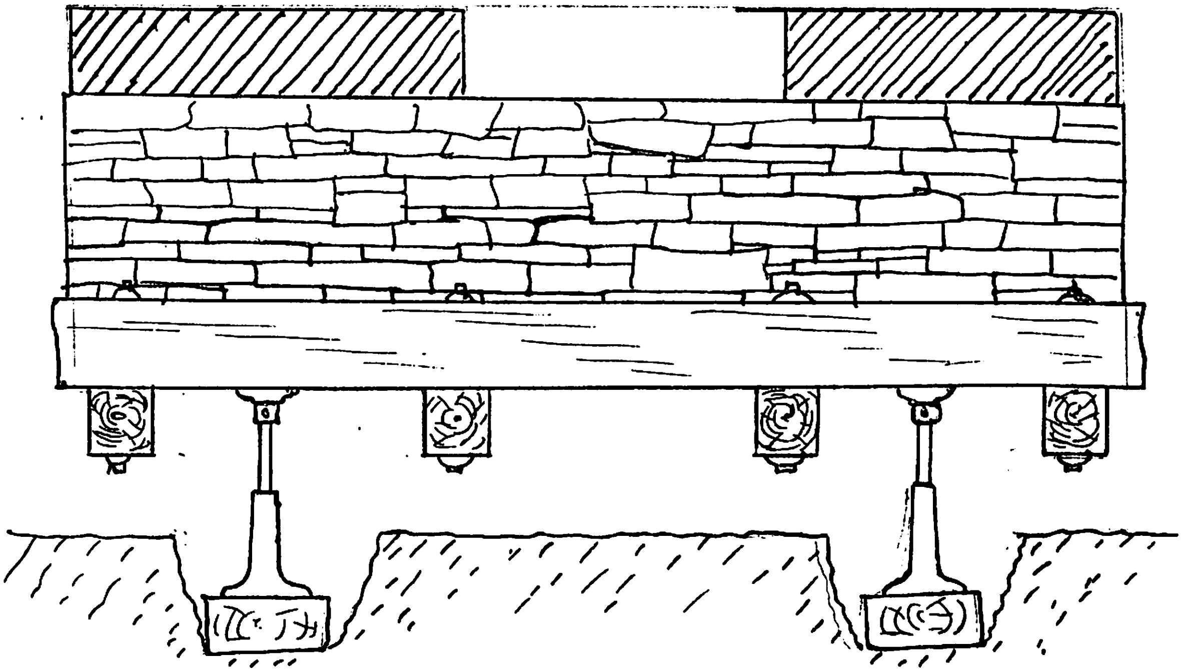
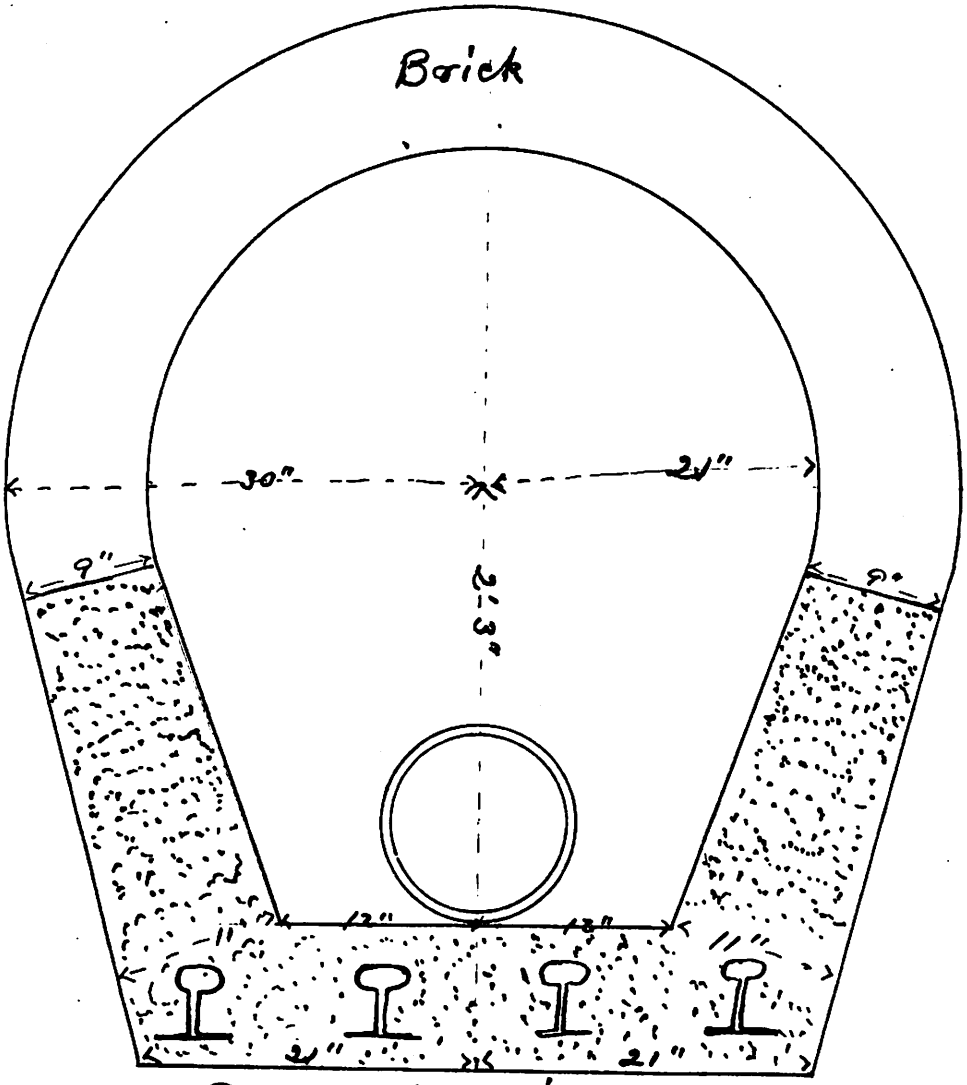

Present bottom.
Elevation,
Bottom lowered – 10'



Lowering pumps— this sketch is not drawn to scale—

MEM. AM. SOC. C. E. (1875.)

1611 BALTIMORE AVENUE,
Kansas City, Mo., ______________ 189__


Brick
30"
21"
2'3"
9"
9"
12"
13"
11"
11"
21"
21"

Concrete invert